



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,784	11/02/2001	Kevin A. Marshall	SUN1P749/P5575NP	3211
22434	7590	08/27/2007		
BEYER WEAVER LLP			EXAMINER	
P.O. BOX 70250			KENDALL, CHUCK O	
OAKLAND, CA 94612-0250			ART UNIT	PAPER NUMBER
			2192	
			MAIL DATE	DELIVERY MODE
			08/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

41

Office Action Summary	Application No. 10/052,784	Applicant(s) MARSHALL, KEVIN A.	
	Examiner Chuck O. Kendall	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/08/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-2, 4, 5, 7 - 14, 17 - 24 is/are pending in the application.
- 4a) Of the above claim(s) 3, 6 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4, 5, 7 - 14, 17 - 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 2, 4 – 5, 7 – 14 and 16 – 24 are amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 22 – 24 are rejected under 35 U.S.C. 103(a) as being anticipated by Arbousov USPN 5,701,487 and in view of Birum et al. USPN 7,100,152.

Regarding claims 1 and 22, Arbousov teaches a method (8:40 – 9:50), apparatus (9:50-10:62) comprising a processor a memory, and a computer-readable medium storing instructions for automatically generating data regarding errors in a software system, the software system including one or more software components the method comprising:

determining a size of the one or more software components responsible for the errors (5:60 – 6:5, shows obtaining a history and error lines of codes which corresponds to the leaves of the trees); and said errors being errors generated during execution of the software system (6:10 – 15, see executing software instructions).

Art Unit: 2192

Although Arbousov doesn't expressly disclose a number of the errors, attributed to each of the software components determined to be responsible for the errors in the software system during execution, he does infact disclose determining errors during compilation of the code (see 2:1 – 5 and 2:18 – 23). However, Birum et al. teaches that typically following the compilation of software code, when code is executable the executable code can the be debugged to determine if the software performs the task correctly or if instead one ore more errors occur during execution (1:20 – 30). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Arbouvoz and Birum because, it would enable determining if the software is executing correctly as suggested by Birum.

Regarding claim 2 recites a computer-readable medium version of the method addressed in claim 1, therefore, is rejected for the same reasons as cited in claim 1.

Regarding claims 23 and 24 recite an apparatus version of the method addressed in claim 1, therefore, are rejected for the same reasons as cited in claim 1.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 or this title, if the differences between the subject matter sought to be patented and

Art Unit: 2192

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbousov USPN 5,701,487 and in view of Birum et al. USPN 7,100,152 as applied in claim 1 in view of Chung et al. (US 6745348).

Claim 2

The rejection of base claim 1 is incorporated. Arbousov as modified further teach correlating the size of the determined software components with the number of errors attributed to the determined software components (5:60 – 6:5, shows obtaining a history and error lines of codes which corresponds to the leaves of the trees). The combination of Arbousov and Birum doesn't explicitly disclose enabling data indicating a probability of errors occurring during execution of a set of software components to be generated from the determined size of the software components determined to be responsible for the errors and the number of the errors attributed to each of the software components determined to be responsible for the errors.

However, Chung does disclose in an analogous art and similar configuration estimating and identifying the number of faults and calculating based on counts of lines scanned for the faults, (see FIG.2 & all associated text, 201-205). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Arbousov and Birum and Chung because it would enable predicting errors in the code.

Claims 3, 16

Claims 3 and 16 recite limitations which have been addressed in claims 1, 2, therefore, are rejected for the same reasons as cited in claims 1, 2.

4. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbousov USPN 5,701,487 and in view of Birum et al. USPN 7,100,152 as applied in claim 1 in view of Chung et al. (US 6745348) and further in view of Ruhlen et al. (US 6665824), hereinafter, Ruhlen et al.

Claim 4

The rejection of base claim 1 is incorporated. Arbousov as modified does not expressly disclose the contents of one or more files examined further indicating one or more source code modifications made in response to the errors.

However, Ruhlen et al. disclose a method for tracking/counting errors which occur during the execution of the software components (e.g., col.1:15-18, col.1:23-28, see failure reporting executable 230 FIG.2 & associated text) in a software system including one or more software components (e.g., col.4:10-13), storing the modifications (i.e., source code changes) made in response to the errors (e.g., col.3:63-67), in a file (e.g., see repository 235 FIG.2 & associated text, col.2:11-13). Arbousov and Chung et al. (hereinafter AC) and Ruhlen et al. are analogous art since

Art Unit: 2192

they are both directed to tracking and counting the number of errors occurred in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of Ruhlen et al. into that of AC to include tracking and storing modifications made in response to the errors. And the motivation for doing so would have been to minimize the time and cost of error query processing as conventionally performed by a computer program, thus improving the technique for locating of errors in a software system and improve the handling of error queries and technical support in an environment where the software system is distributed and used by a large number of clients (e.g., see motivation suggested by Ruhlen et al. col.1: 29 – 36; col.1:43-65).

Claim 5

The rejection of base claim 4 is incorporated. Ruhlen et al. further teaches wherein determining from the one or more files one or more of the software components responsible for the errors comprises: determining from the source code modifications/changes (e.g., see application version number, module version number col. 6:65 - col.7: 3, see "10.0.2310.1 ", "10.0.2312.1" co1.7:10 - 25) one or more software components modified (e.g., see application program name, module name col.6:66-col.7:3, see "Winword.exe", "mso.dll" co1.7:10-25) to correct the errors (e.g., see failing instruction's instruction pointer col.6:66-col.7:3, see "Obcd1234" co1.7:10-25). It would have been obvious to one of ordinary skill in the pertinent art at the time

the invention was made combine the teachings and the motivation for doing so would have been that which has been as applied to claim 4.

5. Claims 7-9, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbousov USPN 5,701,487 as applied in claim 1 in view of Chung et al. (US 6745348) in view of Ruhlen et al, further in view of Leung (US 6769114), hereinafter, Leung.

Claim 7

The rejection of base claim 1 is incorporated. Arbousov as modified by Chung and Ruhlen doesn't teach wherein examining contents of one or more files indicating one or more errors in the software system comprises generating a list of one or more errors corresponding to source code changes (see claim 4). The combined teaching (Arbousov, Chung & Ruhlen et al), hereinafter referred to as ACR, does not expressly disclose generating a list of one or more files associated with successful attempts to correct the errors. However, Leung discloses a method (e.g., see Abstract) of tracking/associating errors (e.g., col.6:25-41) with modifications (i.e., versions, files, source code changes) (e.g., see software modifications col.3:25-29, see second version co1.9:20-23, col.12:58-61) and associating modifications with successful attempts (e.g., see previous passed integration tests col.3:25-29, co1.9:20-23) to correct the errors (e.g., col.1:19-23, see interface error col.9:27 28, see sequence error col.9:31-32, col.12:62-64, col.11:1-6). ACR and Leung are analogous art since they're both directed

Art Unit: 2192

at tracking errors in a software system. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of ACR with that of Leung to include the associating of modifications with successful attempts to correct the errors. And the motivation for doing so would have been to monitor the modifications of software components and prevent them from invalidating previous tested and passed versions (i.e., successful attempts to correct errors/defects) of the software components (see motivation suggested by Leung Abstract; col.1: 24-50; col.6:42-46; col.6:65-col.7:5; col.10:13-20; col.14:42-47; col.15:19-30).

Claims 8-9 and 13-14

Claims recite limitations which have been addressed in claims 4 and 7, therefore, are rejected for the same reasons as cited in claims 4 and 7.

6. Claims 10-12, 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbousov USPN 5,701,487 and in view of Birum et al. USPN 7,100,152 in view of Chung et al. in view of Ruhlen et al. further in view Hanson (US 5946493), hereinafter Hanson.

Claim 10

The rejection of base claim 1 is incorporated. Arbousov as modified teach wherein determining a size of the one or more software components responsible for the

errors comprises determining a section of code modified (e.g., modifications, versions) to fix an error (see claim 5). The combination of Arbousov, as modified above does not expressly disclose determining start and end lines of a section of code. However, Hanson discloses a method (e.g., see Abstract) for determining the start (e.g., see first line.112 FIG.3A & associated text) and end lines (e.g., see last annotated line 116 FIG.3A & associated text) of a section of code (e.g., see FIG.2A, 213, 2D & associated text), matching one or more line numbers associated with source code against compiled information (e.g., see 101 FIG.3A & associated text) associated with the source code (e.g., see 106 FIG.3A & associated text, col.1:32-36, col.1:53-58), converting the start (e.g., see (JOJ FIG.2A & associated text) and end lines (e.g., see j12J FIG.2A & associated text) of a section of source code to the start (e.g., see 28 FIG.2B & associated text) and end lines of a current version (e.g., see 40 FIG.2 B & associated text, see object code col.1:32-36) of a file (e.g., see 108 FIG.3A & associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made modify the teaching of

Arbousov as modified with that of Hanson to include determining the start and end lines for a section of code modified to fix an error, matching line numbers associated with the modified source code against compiled information associated with the source code and converting the start and end lines of a section of code to the start and end lines of a current version of a file. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Arbousov, Birum Chung and Rulen with Hanson because it would have enabled generating a

Art Unit: 2192

listing associating/mapping the object code (compiled) instructions with the source code instructions which can be used to debug the program, investigate performance problems, and improve the analysis of the quality of the compiled object code (see motivation suggested by Hanson col.1: 42-60).

Claims 11-12, 17-19, 21

Claims recite limitations which have been addressed in claims 5 and 10, therefore, are rejected for the same reasons as cited in claims 5 and 10.

Claim 20

The rejection of base claim 18 is incorporated. Hanson further teaches comparing information associated with a source code to determine one or more line numbers associated with the modified source code (e.g., see 108 FIG.3A 8 associated text). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to combine the teachings of Hanson and Arbouzov as modified and the motivation for doing so would have been that which has been applied to claim 10.

Response to Arguments

7. Applicant's arguments with respect to claims 1 – 2, 4 – 5, 7 – 14 and 16 – 24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8.

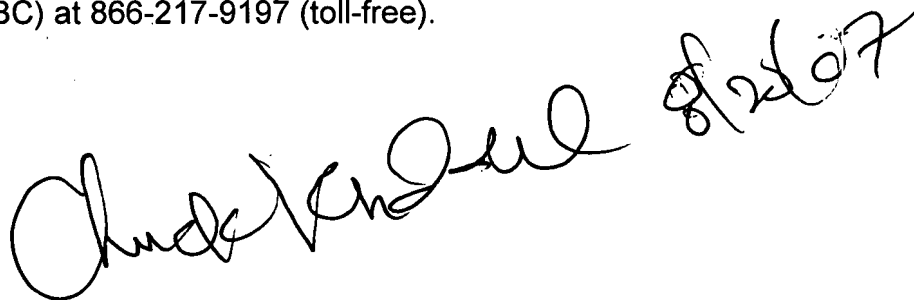
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-272-3698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Art Unit: 2192

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck.

A handwritten signature in cursive script, followed by the date 8/22/07.